

Remarks/Arguments

1 In the specification, minor editorial problems have been corrected as follows:

2 Reference numbers 63 and 82 have been deleted from the specification.

3 In regard to examiner's assertion that the Brief Summary of the Drawings was
4 improperly drafted, a revised Brief Summary of the Drawings is attached.

5 In regard to examiner's assertion that the patentable elements of the invention have not
6 been set out, a revised Summary of the Invention is attached.

7 Regarding the assertion that new drawings are required and in regard to it item 3(i) of
8 the First Office Action of July 25, 2005, reference numbers 63 and 82 have been deleted from
9 the specification. Regarding item 3(ii), reference number 19 is first referenced as a "harmonic
10 frequency sensor 19" at page 9, lines 19-22 and consistently thereafter at page 13, line 11,
11 and not as a "wheel torque sensor" or "center of gravity sensor" as asserted by the Examiner.

12 The word "flux" is inserted before the word sensor, page 17, line 4 as the description of
13 this sensor as a flux sensor 35 is appropriate as it senses flux in both an electromagnetic
14 clutch 24 and in an ABS controller 48. It should be understood that an ABS controller 48 can
15 be a stand alone unit or can be mounted on the master brake cylinder 48. The relevant phrase
16 at page 13, line 16 therefore is modified to read "... , a flux sensor 35 on the ABS controller 48
17 alone or on the master brake cylinder 28,...". Figure 11B schematically shows the two items
18 28, 48 as one unit. Should it be deemed that the term "alone or" adds new material, the term
19 can be omitted however it is asserted by the applicant that the original wording of "and/or"
20 discloses usage on a stand alone ABS controller 48 only.

21 In reference to item 3(iii), please refer to page 3, lines 19-23 and page 4, line 1,
22 wherein the specification states "...Alternately, said display device 30 is a hand held computer,
23 also called a PDA ..." and to Figure 11B which schematically shows a mounted display 30

1 linked from a display system CPU 36 with input from a flux sensor 35. The PDA typically is
2 mounted within the vehicle on or near the dash. The term "mounted" refers to a new
3 component which was not original equipment and which is mounted on or within a vehicle.

4 In conclusion therefore, it is asserted by the applicant that no new or corrected
5 drawings are required.

6 In regard to examiner's assertion that the prior art cited by both the applicant and by the
7 examiner adversely read on the present invention, a new Background of the Invention and a
8 new Field of Invention are attached. The following discussion of prior art is presented in this
9 regard.

10 The prior art made of record, four patents, and cited by the applicant and the seven
11 patents cited in the Office Action, are commented upon herein below as follows:

12 Regarding Dunwoody et al, US Pat No 5,825,284, the disclosure is of a system and
13 method relating to the approach of a rollover condition of a vehicle. It makes no mention of
14 and no claims are made regarding the display of information regarding the torque delivered to
15 the wheels, the amount of the braking forces at the wheels, the steering angle of the front
16 wheels or the power consumption of vehicle components. Regarding these specific items, the
17 Dunwoody patent is completely silent. Therefore for the presentation of such information,
18 which is disclosed by the present invention, the Dunwoody patent is remote and is not
19 instructive.

20 Comment however is required as regards the detection of the approach of a rollover
21 condition of a vehicle as disclosed by the Dunwoody patent. In this regard, the Dunwoody
22 patent is defective. The Dunwoody patent discloses the need to determine the "lateral
23 acceleration and the lateral load transfer" and to calculate an "actual roll moment" using tilt
24 sensors. In this regard, the Dunwoody specification states as follows:

1 "In a preferred embodiment, roll moment calculator and center of gravity calculator are
2 portions of a single processor. The processor calculates a lateral load transfer ratio indicative
3 of an actual roll moment compared to a maximum roll moment, with the display indicating the
4 lateral load transfer ratio. In one embodiment, the sensor assembly includes three
5 independent sensor units. The first sensor unit is mounted to the frame to generate signals
6 indicative of lateral acceleration of the vehicle body. The second and third sensor units are
7 oriented to generate signals indicative of lateral load transfer in the suspension system. The
8 second and third sensor units may be mounted on opposing sides of the vehicle axle to
9 generate signals indicative of load transfer from one side of the vehicle axle to the opposing
10 side of the vehicle axle. The second and third sensor units may be processed to generate a
11 differential signal used to determine the lateral load transfer. In an alternative embodiment,
12 the sensor assembly comprises two sensor units. The first sensor unit is coupled to the frame
13 to detect lateral acceleration while the second sensor unit is mounted on the vehicle axle. The
14 first and second sensor units are used to detect load transfer from one side of the vehicle axle
15 to the opposing side of the vehicle axle."

16 The methods described by the Dunwoody patent to determine the true center of gravity
17 of a vehicle are inoperable. The measurement means described to determine "a lateral load
18 transfer" by the Dunwoody patent is by measuring a lateral weight shift of a vehicle. This type
19 of measurement is directly affected by irregularities in the roadway which can cause a
20 expansive or contractive force in an axle or lateral shifts in the vehicle. More importantly
21 however, the lateral weight shifts of a vehicle are not directly related to its center of gravity.
22 Restated, a heavy low load can give the same sensed result, a lateral weight shift, as a higher
23 lighter load even though the centers of gravity are different. The lateral acceleration sensor
24 does not provide center of gravity information. Although the Dunwoody patent claims to be

1 able to calculate the true center of gravity of a vehicle, the means disclosed fail to achieve this
2 objective.

3 The present invention utilizes a harmonic frequency analyzer 19 to analyze the
4 frequency of the principal lateral resonance mode. Regardless of the weight distribution within
5 a vehicle, it provides the information needed to calculate the true center of gravity as the
6 principal vibration modes of the vehicle are always centered on the center of gravity of the
7 vehicle. Changes in the frequency sensed therefore are directly related to vertical shifts in the
8 center of gravity. The front-to-rear oscillations are not needed and are not measured. This
9 center of gravity information and the data from the lateral acceleration sensor 37 allow the
10 calculation of the true orientation of the weight vector toward the line between the bottoms of
11 the two wheels on one side of the vehicle from the center of gravity. This vector, as calculated
12 and as displayed, is a very accurate and precise indication of the approach of a rollover
13 condition for a vehicle. As regards the detection and calculation of the approach of a rollover
14 condition of a vehicle, the method used by the present invention is very different from that
15 described by the Dunwoody patent. In this regard the present invention is a fully operable,
16 accurate and new apparatus, system and method.

17 The Dunwoody patent does not disclose a method of accurately determining the center
18 of gravity of a vehicle or the true turning moment. Therefore it teaches away from the present
19 invention and teaches an inoperable technology.

20 Regarding Hoffman et al, US Pat No 5,949,330, the disclosure is of an apparatus and
21 method for a general monitoring and diagnosing means. The means disclosed are for any
22 type of system which can be monitored and no mention is made of any application involving a
23 motor vehicle. It recites the use of a flashing signal when switching from a graphical
24 representation to a numerical presentation. The Hoffman patent does not recite the specific

1 operating parameters which are to be monitored nor any specific type of graphical
2 presentation. The scope of use of the disclosed apparatus and method is broad, however its
3 vagueness and lack of specificity should not be a general bar to other, novel applications
4 which disclose dedicated applications involving displays. The Hoffman patent does not
5 disclose a display which indicates the approach of a rollover condition of a vehicle or of the
6 distribution of torque to the wheels of a vehicle or of the braking forces at the wheels of a
7 vehicle. Therefore it is remote from the present invention. It does not teach or disclose the
8 present invention which is a new combination.

9 Regarding Hauler, et al, US Pat No 6,721,634, the disclosure is of methods of utilizing
10 a "freely programmable instrument cluster" within a vehicle whose various types of displays are
11 selectable by the driver. These displays are not dedicated displays as with the present
12 invention. No disclosure is made of displays which present information regarding the approach
13 of a rollover condition for a vehicle, the braking forces at the wheels or the torque delivered to
14 the wheels. The disclosed "freely programmable instrument cluster" is intended to provide the
15 driver with a variety of options for the review of operational parameters. The Hoffman patent
16 thus does not disclose or teach the present invention.

17 Regarding Opel, US Pat No 5,555,502, the disclosure is of a control system and an
18 associated method to regulate the performance of a vehicle by using a display and control
19 input means to modify the performance of the vehicle. An active input decision and action by
20 the driver is required by the disclosed system and associated method. The actions of the
21 driver modify the operating parameters of the vehicle in response to the parameters displayed.
22 This dynamic input and control required of the driver to modify the operating parameters of a
23 vehicle is a specialized control system unrelated to the present invention. A general type of
24 display is disclosed with no disclosure of the display of information relating to the distribution of

1 torque to the wheels, braking forces or the approach of a rollover condition for the vehicle.
2 Further even if this type of information would be displayed, it would be of no value to a driver
3 having a system as described by the Opel patent as such information could not be used to
4 modify the operating parameters of a vehicle. Restated, the distribution of torque to the
5 wheels for the present invention is not under the control of the driver but is an automatic
6 response of the control system of the vehicle. At best, the presentation of this information is
7 purely a passive presentation from which no action modifying the vehicle's operating
8 parameters by a driver is possible. Such information however can be used by the driver to
9 modify the manner in which the vehicle is driven and this aspect of control is at the core of the
10 present invention. It is absent from the concepts disclosed by the Opel patent. The Opel
11 patent therefore is remote from and does not teach the present invention.

12 Regarding Jabei, et al, US Pat No 5,880,710, the disclosure is of a device and a
13 method relating to the display of vehicle operating parameters. The method recited involves a
14 general selection and display means. A classification scheme is disclosed which selects
15 among various out-of-range parameters for their display to the driver. The approach utilized
16 involves the filtering of information obtained from various components prior to displaying the
17 information to the driver. The Jabei patent discloses a device and method of providing "a first
18 display having a plurality of selectively energizable segments arranged in a preselected
19 pattern" which requires a selective process either by a processing means and/or by the driver.
20 No disclosure is made of any process of or means for the presentation of the approach of a
21 rollover condition of a vehicle or of the distribution of torque to the wheels. The device and
22 method disclosed are not dedicated display means and utilize a filtering process whose logic
23 determines what is to be presented. This is remote from and does not teach the present
24 invention.

1 Regarding Haubner, et al, US Pat No 4,594,572, the disclosure is of a complex display
2 means having multiple presentations and is primarily concerned with the manner of processing
3 the information. Although the status of a wide variety of dynamic conditions regarding a
4 vehicle can be presented, the examples given are of currently available presentations such as
5 the amount of fuel in the fuel tank. Further, the presentations are lumped into a series of
6 blocks and are not independent dedicated displays. No disclosure is made regarding the
7 display of information regarding the approach of a rollover condition of a vehicle or of the
8 torque delivered to the wheels. The vague, general claims and, except for a fuel gauge, the
9 lack of specificity as to operating parameters in the specification provides no insight as to the
10 types of information to be collected and displayed. The Haubner patent does not disclose or
11 teach the method, the device or the system of the present invention.

12 Regarding Berkert, et al, US Pa No 5,949,345, the disclosure indicates that application
13 software programs and their related screens are to be utilized and that selection among the
14 options provided by these are to be made by the driver while the vehicle is being driven. The
15 system disclosed by the Berkert patent utilizes a standard computer oriented selection method
16 for access to the display information. It is not a dedicated system which always presents
17 specific types of information at all times as is done with the present invention. No disclosure is
18 made by the Berkert patent of the display of information regarding the approach of a rollover
19 condition of a vehicle or of the torque delivered to the wheels. The apparatus, method and
20 system disclosed by the present invention is a dedicated presentation of specific types of
21 information which is not taught by the Berkert patent.

22 Regarding Sumada, et al, US Pat No 6,603,393, the disclosure is of a display system of
23 "high-priority and high-emergency information", the sole example given being that of an open
24 trunk compartment of a car. The disclosure is an attempt to broadly encompass all displays of

1 any type of information which may be of use to a driver of a vehicle or a motorcycle while only
2 enumerating one example. The Sumada patent does not disclose or teach the presentation of
3 information regarding the approach of a rollover condition of a vehicle or of torque distribution
4 to the wheels. The vagueness of the disclosure and the lack of specificity as to the
5 parameters to be monitored and as to the manner of displaying the information, should
6 properly limit the scope of the Sumada patent to the specific application described therein.
7 The Sumada patent is remote from the apparatus, system and method of the present
8 invention.

9 Regarding Iida, et al, US Pat No 6,497,301, the disclosure is of a variable torque
10 distribution system and does not disclose a means of monitoring a system or of displaying the
11 dynamic condition of vehicle parameters to the driver. The Iida patent is not relevant to a
12 display means as disclosed by the present invention.

13 Regarding Nishida, et al, US Pat No 6,493,623, the disclosure is of a dedicated transfer
14 means for power transfer for a four wheel drive vehicle and does not disclose a means of
15 monitoring a system or of monitoring the status of a system and of displaying the dynamic
16 condition of the vehicle's components to the driver. The Nishida patent is not relevant to a
17 monitoring and display system, method or apparatus as disclosed by the present invention.

18 Regarding Brown, et al, US Pat No 6,398,688, the disclosure is of an special clutch
19 system for the transfer of power and does not disclose a means of monitoring or displaying the
20 status of a system. The Brown patent is not relevant to a monitoring and display means as
21 disclosed by the present invention.

22 The recital of the use of a display means for presenting vehicle parameters should not
23 of itself disqualify an application. The Dunwoody, Hoffman, Hauler, Opel, Jabei, Haubner,
24 Berkert and Sumada patents are each valid, issued US patents, each of which disclose some

1 form of a display means as an integral part of the individual inventions, with each presenting
2 operating parameters; all but one being for a vehicle. The use of a display system as
3 disclosed by any one of these patents does not, of itself, disqualify any of the rest of the
4 patents on the basis of lack of novelty, nonobviousness or by constituting prior art which bars
5 issuance under 35 U.S.C. 102(b). Therefore the use of a display means, of itself, as set out in
6 the specification and claims of the present invention should not be barred under 35 U.S.C.
7 102(b).

8 Applicant respectfully request that a timely Notice of Allowance be issued in this case.

9 Respectfully submitted,

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